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Original Article

Evaluation of Dentists' Proficiency in Emergency Management of Permanent Tooth Injuries: A Cross-sectional Study.

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Abstract
Traumatic dental injuries represent a significant public health concern, impacting individuals across all age groups and accounting for 20-30% of permanent dentition injuries worldwide. The primary causes include accidental falls, sports, and traffic accidents, with consequences such as pulp necrosis, root resorption, and compromised quality of life. Effective emergency management is critical to improving outcomes, yet knowledge gaps among healthcare providers remain a challenge. This study evaluates the knowledge, attitudes, and practices of Libyan dentists in Benghazi regarding the emergency management of TDIs in permanent teeth. A cross-sectional study was conducted between August and October 2024, involving 260 dental practitioners in Benghazi. Data were collected using a validated, self-administered questionnaire based on International Association of Dental Traumatology guidelines. The survey assessed demographic variables, self-evaluated knowledge, and practical approaches to managing common dental injuries. Statistical analyses were performed using SPSS and R software. The majority of participants were under 40 years old (83.8%), with 53.5% being general dentists. Most worked in private clinics (58.8%), and 68.1% demonstrated a good level of knowledge about TDI management. However, 31.9% exhibited insufficient understanding, particularly regarding complex injuries. Despite this, 96.2% reported positive practices in emergency care, underscoring their commitment to patient outcomes. While most dentists in Benghazi exhibit adequate knowledge and positive practices in managing TDIs, gaps remain in handling complex cases. This study highlights the need for targeted training programs to enhance practitioners' proficiency and ensure optimal care for dental trauma patients.
Keywords. Dental Trauma, Traumatic Dental Injuries, Permanent Teeth, Emergency Management, Dentists' Knowledge.

Introduction

Traumatic dental injuries (TDIs) pose a severe public health concern and may damage the quality of life, with possible economic consequences for afflicted persons [1,2]. Defined as an external impact on dental tissues, including damage to teeth, soft tissues, and the surrounding periodontium [3].

Traumatic dental injuries occur in preschool children, adolescents, and adults, and they impact around 20-30% of permanent dentitions globally [4]. Childhood and adolescence are particularly prone to traumatic dental injuries [5]. With two peak incidences in males, ages 1-3 and 10–12, and a peak in girls, ages 13– 14 [6]. The prevalence of dental trauma varies from country to country and according to the type of study. It has been predicted that the prevalence of dental trauma will likely be as high as dental caries and periodontal diseases, which are currently the most common oral diseases [7].

The vast majority of studies have reported that the most frequent causes of TDIs are accidental falls, sports activities, bicycling, violence, and traffic accidents [6,8]. Traumatic injuries to teeth are not self-healing and can have unpredictable prognoses. Timely diagnosis, appropriate treatment, and follow-up are essential to minimize these injuries' social and economic impact. The nature of the damage is based on several factors, including the magnitude and direction of the force on impact and the shape of the injured 'object'. Also, certain predisposing factors may result in the patient having a higher risk of injury, for example, an overjet greater than 3 mm or incompetent lips [6,9].

TDI in permanent teeth can cause permanent complications, depending upon the severity, type, and duration of dental trauma, such as crown and root fracture, tooth discoloration, pulp necrosis, apical periodontitis, root resorption, and may also influence maxillofacial development [4,10]. Moreover, people with untreated dental trauma experience social isolation and embarrassment, as well as a lower quality of life due to their poor oral health [11,12].

The management of Traumatic Dental Injuries (TDIs) involves addressing both short- and long-term therapeutic considerations. Even seemingly minor injuries that may appear insignificant during a stressful event can lead to significant long-term effects. Despite receiving appropriate acute care, long-term repercussions can emerge and may take years to manifest. However, prompt emergency care is essential for effectively managing dental trauma, as it plays a critical role in improving tooth prognosis and minimizing complications. The time elapsed between the injury and initial treatment can greatly influence treatment outcomes and the likelihood of tooth survival [13–15].

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The prognosis of teeth after the injury depends on the type of TDI, the emergency treatment, and the time elapsed until the final restoration [16].Insufficient knowledge among the general population and medical professionals typically results in pain, severe symptoms, a bad prognosis, and delays in discovering treatment options [17]. The pulp tissues of permanent teeth are impacted by severe dental trauma, which causes inflammation and ultimately necrosis. Root canal therapy (RCT) is the most common and successful treatment for this problem. However, because it cannot seal the apex securely, traditional RCT is ineffective for managing infections in young permanent teeth whose roots have not fully formed. Recently, scientists have suggested that immature permanent teeth with pulp exposure and irreversible pulpitis could be treated with less invasive VPT. Additionally, compared to mature permanent teeth, the pulp tissue of immature permanent teeth has a greater blood supply and a higher cell composition, which enhances the tissue's ability to regenerate and heal. Consequently, following VPT, the residual pulp tissues can promote the physiological development of the apical foramen of young permanent teeth[18,19]. Overall, four kinds of VPT for young permanent teeth are employed in clinical practice: indirect pulp capping, direct pulp capping, and pulpotomy, which is further split into partial and whole pulpotomies. All are used differently depending on the age of the patient. Total pulpotomy and partial pulpotomy are examples of partial pulp preservation, while indirect pulp capping and direct pulp capping preserve the entire pulp and have a more beneficial impact on tooth formation [19]. The purpose of this study is to assess the ability of Libyan dentists in Benghazi to handle situations requiring irreversible tooth damage. To evaluate practitioners' knowledge, attitudes, and practices regarding the emergency management of such dental injuries, this cross-sectional study was conducted.

Methods

Study design and setting

This observational study aimed to evaluate the level of knowledge and attitude toward the management of traumatic dental injuries in permanent teeth among Libyan dentists and specialists in Benghazi, Libya. Started between August and October 2024. This was targeted at randomly selected dentists working in Benghazi.

Data collection

This survey was created using questionnaires from earlier related studies after literature research, adequate for the study, namely, assessment of knowledge about the management of TDIs [20]. The questions were adapted following the official recommendations of the guide developed by the IADT regarding the management of teeth with TDIs: coronal fractures, luxation, and dental avulsions [13,14].

A self-designed, close-ended, online questionnaire was designed and tested among a random sample of dental practitioners to ensure the validity and practicability of responses. The questionnaire items were based on the International Association of Dental Traumatology guidelines. The questionnaire consists of two sections. The dentists' demographic information, including their gender, age, and years in dental practice, was recorded in the first section, and self-evaluation of their knowledge of dental trauma was recorded in the second section. 18 closed-ended questions about the knowledge of the management of traumatized teeth, the most common traumatic dental injuries, their potential complications, and available treatments were included in the second section of the survey. Dentists were instructed to check the answer that most closely matches their expertise and the type of treatment they would take in each circumstance. Evidence-based literature was the source of the correct response. The questionnaire was turned in to the investigator once it had been completed and the questions had been answered.

Data analysis

The data were analyzed using descriptive statistics using SPSS software.

Results

The initial section of the statistical analysis focused on the study data, which involved 260 individuals working in the oral and dental health field. This analysis highlighted demographic variables such as age, gender, work experience, specialties, and work locations. The data were obtained using a simple random sample to validate the study's objectives.

The age categories of individuals under 30 and those between 30 and 40 comprised the largest percentage, totaling 41.9%. The age group of 41 to 50 years ranked second, accounting for 13.5%, while the age group of over 50 represented the smallest percentage at 2.7%. It is important to note that younger individuals are well represented in healthcare roles, reflecting their active participation and strong desire to acquire practical experience.

Females constituted a higher percentage at 54.6%, while males accounted for 45.4%. The close percentages of males and females in the sample indicate diversity and balance in its composition.

The distribution of work experience among the study sample. We observed that the category of individuals with less than 5 years of experience leads with a percentage of 43.1%. This was followed by those with 5 to

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10 years of experience, comprising 30.4% of the sample, and individuals with more than 10 years of experience, who account for 26.5%. It has been previously indicated that the youth category is the most represented in the sample, as they are actively working to build their experience with the support of older age groups (Table 1).

Table 1. Participants' distribution based on age and demographic factors

Demographic characteristics		No.	Percent %
Age (years)	Under 30	109	41.9%
	30 - 40	109	41.9%
	41 - 50	35	13.5%
	over 50	7	2.7%
Gender	Male	118	45.4%
	Female	142	54.6%
Years of Practice	less than 5 years	112	43.1%
	5 - 10	79	30.4%
	Over 10 years	69	26.5%

Regarding the variable of specialization, the largest percentage of respondents hold the general dentist position, accounting for 53.5%. This is followed by pediatric dentists and conservative dentists or endodontists, which have nearly equal percentages of 13.8% and 13.5%, respectively. The position of periodontist represents 7.3% of the sample, while 11.9% of positions are classified under other roles within the field of oral and dental health.

The findings indicated that 58.8% of the participants are employed in private clinics, while 23.8% work in public hospitals. Additionally, 15.8% of the sample are engaged in educational institutions, and 1.5% hold other positions in the field of oral and dental health.

It was shown that the majority of the sample, 68.1%, had a good understanding of the necessary medical procedures required in emergency cases of traumatic dental injuries (TDI). In contrast, 31.9% of the participants have a low level of knowledge regarding these procedures (Figure 1).

The percentage of correct and positive practices reached a high level of 96.2%, while incorrect practices account for only 3.8%. This result suggests that the study sample has significant practical experience in the application of emergency and rapid care for TDI (Figure 2).

While measuring the level of knowledge regarding the medical procedures necessary to handle emergency cases of TDI, a total of 61.2% of the respondents correctly chose "Pulp hemorrhage" as a clinical sign of a complicated crown fracture, indicating an adequate level of knowledge on this topic. Moreover, when asked about the procedure indicated in the management of a complicated crown fracture of an immature front tooth, the majority of respondents, 60.4%, chose (Partial pulpotomy), although the correct answer is (direct pulp capping) at 27.7%. when asked about the management of an intrusion of an immature anterior tooth, the correct answer (The tooth will likely re-erupt spontaneously) had the highest response rate at 66.9%. Similarly, the highest percentage of respondents (91.2%) selected tooth mobility as the most common clinical sign of dental luxation, suggesting that they knew enough about it.

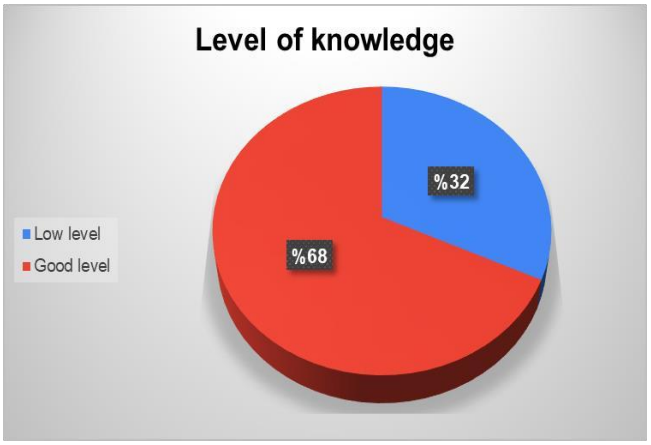

Figure1. Displays the Level of knowledge.

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Figure 2 shows the Level of practices

When asked about the diagnosis of the lateral luxation injury of an anterior tooth, the highest percentage for the correct answer (infection in the root canal system of the tooth) was 60.4%. Finally, the respondents indicated proper knowledge about avulsion, with 77.7% selecting the correct answer (replant the tooth and immediately go to the dental office). When asked about the recommendation for the avulsed tooth,
The responses related to the attitudes and positions adopted by the study sample regarding the medical procedures necessary to handle emergency cases of TDI are illustrated in (Table 2).
According to the responses, a significant majority (61.5%) agreed that prompt emergency care is essential for the effective management of TDIs. Subsequently, 66.9% of the sample agreed that they had sufficient knowledge, while 33.1% disagreed. A total of 84.2% of the sample agreed to attend training courses that enhance their knowledge of the medical procedures necessary to handle TDIs. Furthermore, one of the most significant obstacles to the successful administration of treatment, according to 51.5% of the sample, is a lack of knowledge or training. Of those, 27.3% said, "Limited access to emergency resources." 12.3% of respondents answered. (Noncompliance by the patient.) And 8.8% responded to time restrictions.

Table 2. The percentages and frequencies of the questions on Attitudes of the study sample.

Attitudes of the study sample	Variables	No.	Percent %
Do you believe that prompt emergency care is essential for the effective management of traumatic dental injuries TDIs?	Strongly agree.	160	61.5%
	Agree.	84	32.3%
	Neutral	15	5.8%
	Disagree	1	.4%
Do you consider your knowledge satisfactory?	NO	86	33.1%
	YES	174	66.9%
Would you like to attend an additional information course?	NO	41	15.8%
	YES	219	84.2%
What are the most significant barriers you face in providing effective treatment for TDIs?	Lack of knowledge or training.	134	51.5%
	Limited access to emergency resources.	71	27.3%
	Time constraints.	23	8.8%
	Patient non-compliance.	32	12.3%

When assessing the level of practice in providing medical care for traumatic dental injuries among medical personnel, 41.9% reported examining cases of dental trauma frequently, 25% indicated they do so occasionally, while 29.2% stated that dental trauma cases are rarely received or examined in the clinic (Table 3). Furthermore, when asked about their level of confidence in managing TDIs, including cases such as avulsions and pulp therapy. In response, 39.6% and 36.2% expressed varying degrees of confidence, while 21.2% chose not to answer the question, and 3.1% openly admitted a lack of confidence in handling complex cases of dental trauma. The finding revealed that 83.5% of participants correctly identified the optimal time frame for replanting an avulsed tooth stored in dry conditions, emphasizing that it should be replanted within 30 minutes for the best prognosis. Regarding the proper method for cleaning a dirty avulsed tooth before replantation, 63.5% chose the correct answer, rinsing with physiological serum, while 26.9% selected tap water as the cleaning method. indicating a notable gap in knowledge concerning the recommended emergency management of dental avulsion injuries.

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Table 3. The percentages and frequencies of the questions on the practices of the study sample

Practice of the study sample	Variables	No.	Percent %
How often do you encounter cases of dental trauma in your practice?	Frequently	109	41.9%
	Occasionally	65	25.0%
	Rarely	76	29.2%
	Never	10	3.8%
How confident are you in your ability to manage traumatic dental injuries TDIs, including avulsions and pulp therapy?	Very confident	103	39.6%
	Confident	94	36.2%
	Neutral	55	21.2%
	Not confident.	8	3.1%
The best prognosis for an avulsed tooth in dry conditions is when it is replanted	As soon as possible, <30 minutes after trauma.	217	83.5%
	30-60 minutes after the trauma.	28	10.8%
	During the first 24 hours.	11	4.2%
	I do not know.	4	1.5%
If the avulsed tooth was dirty, how would you clean it before reimplantation?	Scrub it with a toothbrush.	5	1.9%
	Rinse it with tap water.	70	26.9%
	Rinse it with physiological serum.	165	63.5%
	Keep in fluoride mouthwash for 10 minutes	20	7.7%
A child arrives at the dental office with an avulsed tooth with an open apex, which had already been replanted within 30 minutes of the trauma occurring. What type of splint is used?	Rigid type.	41	15.8%
	Flexible type.	187	71.9%
	Splinting is not necessary.	9	3.5%
	I do not know	23	8.8%
How long should splinting be worn?	10-14 days	206	79.2%
	28-30 days.	25	9.6%
	60 days.	5	1.9%
	I do not know.	24	9.2%
When should endodontic treatment be performed?	Immediately after replantation.	27	10.4%
	7–10 days after replantation.	164	63.1%
	When the patient has symptoms.	61	23.5%
	I do not know.	8	3.1%
What resources or support would help you improve your management of TDIs?	Continuing education courses	165	63.5%
	Access to specialized equipment	33	12.7%
	Improved referral networks	12	4.6%
	Guidelines and protocols	50	19.2%

Additionally, a scenario involving a child whose avulsed tooth with an open apex was replanted within 30 minutes, 71.9% correctly indicated that a flexible splint should be used. When asked about the recommended splinting duration, 79.2% of participants answered correctly, selecting 10–14 days.
Concerning the appropriate time of endodontic treatment following replantation, only 63.1% of participants correctly selected that it should be performed 7–10 days after replantation. In terms of resources that could enhance the management of TDIs, the most frequently selected option was continuing education courses at 63.5%, followed by guidelines and protocols at 19.2%, access to specialized equipment at 12.7%, and lastly, improved referral networks, selected by 4.6% of respondents.

Discussion

Traumatic dental injuries are an inevitable clinical scenario that necessitates an in-depth understanding to support the appropriate diagnosis and course of care. To provide an overview of the knowledge of resident dentists from three distinct specialties of dentistry, including pediatric dentistry, periodontology, and general dentistry, the current study included the most pertinent questions about the clinical picture and the emergency treatment of dental-periodontic traumatic injuries.
This study is considered one of the few studies conducted in Benghazi to evaluate dental practitioners' understanding of important aspects of dental trauma management, including concussions, crown and root fractures, luxation injuries, avulsion, and alveolar bone fractures.

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The current study analyzed the knowledge of 260 dentists practicing in Benghazi on how to treat intrusion, lateral luxation, avulsion, and complicated fractures in permanent dentition. The results of the current study reveal uneven knowledge among dentists depending on the type of dental trauma injury.

In this study, 68.1% of the respondents possessed good knowledge of the necessary medical procedures when emergency cases of dental injuries (TDI) arrive, while 31.9% had low knowledge of these procedures. Recently, Murariu et al. (2023) conducted similar research in Romania. The authors showed that 74% of the traumatic dental injuries were encountered by the GD specialty. In terms of the understanding of traumatic crown fractures and how to treat them, the percentage of the correct answers ranged from 25.9% to 55% and from 46.4% to 60%, respectively. Residents from the GD have the lowest level of knowledge among the three categories [21].

Recently, the European Society of Endodontology advised performing direct pulp capping for small pulp exposures that are treated shortly after the injury (European Society of Endodontology, 2021) [22]. Hence, in the current study, the knowledge regarding the treatment of complicated crown fractures of immature teeth was inadequate, with only 27.7% recording the correct answer, which is dentists' agreement that pulp capping was the best way to treat pinpoint pulp exposure in an immature complicated crown-fractured incisor, compared to 60.4% who preferred partial pulpotomy.

This result was in contradiction to a previous study conducted to assess the knowledge of 1,532 dentists operating in Spain; the authors revealed intermediate knowledge, with no significant differences across demographic variables. Surprisingly, greater experience was not associated with increased knowledge. Also, the authors revealed that the respondents' knowledge was comparatively high. Depending on the extent of the exposure and the amount of time following exposure, the majority of dentists would use either partial pulpotomy or direct pulp capping [23]. The latter was supported by another researcher [24]. In 2013, Cınar and colleagues performed a study in Turkey and reported that 68.8% of dentists agreed that pulp capping was the best way to treat pinpoint pulp exposure in an immature, complicated crown-fractured incisor, compared to 12.3% who preferred partial pulpotomy. However, for immature, complicated crown-fractured incisors with old, large pulp exposure, 32.5% of the dentists favored partial pulpotomy [25].

Regarding dentists' knowledge about the treatment of intrusion, in general there are three treatment modalities to manage intrusive luxation. The first option is observation for spontaneous re-eruption, especially in primary dentition or immature permanent teeth. The second option is immediate surgical repositioning, especially in case the tooth is completely intruded. The third option is orthodontic repositioning as an alternative to the previous options (European Society of Endodontology, 2021) [22].

In the present study, 66% of answers were correct; dentists choose to allow the tooth to re-erupt spontaneously when the intrusion occurs in immature teeth. This result is in agreement with other studies performed in Turkey; the authors revealed that 76% of dentists chose to allow the intrusively luxated primary teeth to spontaneously re-erupt if the apex of an intruded primary tooth shifted towards the labial bone plate, whereas 11.7% said they would extract traumatized primary teeth right away [25].

Regarding lateral luxation, it was recommended by the European Society of Endodontology (2021) to closely follow up cases of luxation to identify early signs indicating a loss of pulp vitality caused by root canal infection [22]. Whereas the knowledge in the current study showed 60.4% of dentists reported correct answers; hence, the etiology of periapical lesion associated with lateral luxation is the infection in the root canal system of the tooth, while 27.7% answered that an apical external inflammatory resorption is the most likely cause of the lesion. This result is in contrast to another study in Spain, where the percentage of right answers is considered inadequate regarding lateral luxation, which is only 28.5%, while the correct answers for dental intrusion injury were slightly higher (56.5%) [23]. The authors claimed that it could be owing to lateral luxation and intrusion having a relatively low frequency [26], and therefore most dentists have little or no experience with their treatment. Furthermore, Hussein and colleagues reported a similar result in research conducted in Cairo, which showed inadequate knowledge regarding the appropriate treatment of intruded, extruded, and avulsed primary maxillary [27].

Regarding the avulsion of immature permanent teeth, it was recommended that the avulsed tooth be gently rinsed by a stream of sterile saline or a physiologic medium to remove debris, then the socket be irrigated with sterile saline; after that, the alveolar socket should be examined, and then the tooth should be replanted slowly with slight digital pressure (International Association of Dental Traumatology, 2020) [14]. A study on traumatic dental injury performed in Spain reported that 80% of answers were correct [23], which is consistent with other studies assessing the knowledge of avulsion treatment.

In 2020, Haj Ali et al. performed a study in Saudi Arabia; the authors showed that 47.2% of dentists would leave luxated primary teeth for spontaneous realignment, whereas 69.8% would prefer to allow luxated permanent teeth to emerge naturally [28]. Furthermore, the authors tested the knowledge of intern dentists regarding avulsion of teeth, and the result showed 67% of responders tend to gently cleanse avulsed permanent teeth under running tap water, scrubbing and inserting them back into the socket [28]. These results agreed with a previous study [29], while knowledge regarding avulsion recorded lower values in the study performed by Fujita and colleagues, which recorded only 55.4% of students properly answering [30].

In the present study, knowledge regarding the management of avulsion revealed a range of 63% to 83% of

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correct answers, indicating a good understanding among the participants. Consequently, 77.7% of dentists chose to replant the tooth and immediately go to the dental office as a management strategy for avulsion. Additionally, for the best prognosis of avulsed teeth, 83.5% of dentists answered "as soon as possible, <30 minutes after trauma," which is the correct answer, while 10.8% answered "30-60 minutes after the trauma. Furthermore, the management of dirty avulsed teeth recorded that 63.5% of responders chose to rinse the tooth with physiological serum.

Regarding the duration of the splint, the International Association of Dental Traumatology (2020) recommended a splinting period of 2 weeks for an avulsed tooth [14]. In the current study, 79.2% of dentists answered correctly, indicating 10-14 days. Furthermore, 63.1% of dentists provided correct answers regarding the timing of endodontic treatment; these results were in disagreement with findings from another study conducted in Romania, which revealed a lack of understanding about the types of splinting, retention periods, and the endodontic treatment associated with avulsed tooth replantation.

Tewari and colleagues performed a study in India regarding the knowledge satisfaction of TDIs; the study revealed that almost half of the participants expressed dissatisfaction with their understanding of TDIs. However, only 60% of PD residents consented to take extra courses [16]. Whereas in the current study, 66.9% of the dentists were satisfied with their knowledge, while 33.1% were unconfident in their knowledge of TDIs.

Considering the barriers usually faced in providing effective treatment for TDIs in the current study, half of the dentists (51.5%) lacked the knowledge or the training, and 27.3% pointed to limited resources as the prime barrier to providing effective treatment. On the other hand, the European Society of Endodontology stated that the primary barrier to dentists managing these cases was a lack of adequate financial compensation associated with the long-term care of dental trauma [31].

Conclusion

This study highlights that while a majority of dentists in Benghazi possess good knowledge of emergency procedures for traumatic dental injuries (TDIs), significant gaps remain, especially in treating complex cases. Barriers such as a lack of training and resources were identified, emphasizing the need for continuous education. Addressing these gaps can improve TDI management and patient outcomes.

Conflicts of Interest

Authors declare no conflict of interest

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الملخص

تُمثل إصابات الأسنان الرضحية مصدر قلق كبير على الصحة العامة، إذ تؤثر على الأفراد من جميع الفئات العمرية، وتُمثل ما بين 20% و30% من إصابات الأسنان الدائمة في جميع أنحاء العالم. تشمل الأسباب الرئيسية السقوط العرضي، والحوادث الرياضية، وحوادث المرور، مع عواقب مثل نخر اللب، وامتصاص الجذور، وتدني جودة الحياة. تُعد الإدارة الفعالة للطوارئ أمرًا بالغ الأهمية لتحسين النتائج، إلا أن فجوات المعرفة بين مُقدمي الرعاية الصحية لا تزال تُمثل تحديًا. تُقيّم هذه الدراسة معارف ومواقف وممارسات أطباء الأسنان الليبيين في بنغازي فيما يتعلق بالإدارة الطارئة لإصابات الأسنان الرضحية في الأسنان الدائمة. أُجريت دراسة مقطعية بين أغسطس وأكتوبر 2024، شارك فيها 260 طبيب أسنان في بنغازي. جُمعت البيانات باستخدام استبيان مُعتمد ذاتيًا، استنادًا إلى إرشادات الجمعية الدولية لطب إصابات الأسنان. قيّم المسح المتغيرات الديموغرافية، والمعرفة المُقيّمة ذاتيًا، والأساليب العملية لإدارة إصابات الأسنان الشائعة. أُجريت التحليلات الإحصائية باستخدام برنامجي SPSS و .R كانت غالبية المشاركين دون سن الأربعين (83.8%)، وكان 53.5% منهم أطباء أسنان عامين. عمل معظمهم في عيادات خاصة (58.8%)، وأظهر 68.1% منهم مستوى جيدًا من المعرفة بإدارة إصابات الأسنان المزمنة. ومع ذلك، أظهر 31.9% منهم فهمًا غير كافٍ، لا سيما فيما يتعلق بالإصابات المعقدة. على الرغم من ذلك، أفاد 96.2% بممارسات إيجابية في رعاية الطوارئ، مما يؤكد التزامهم بتحقيق نتائج مرضاهم. في حين أن معظم أطباء الأسنان في بنغازي يتمتعون بمعرفة كافية وممارسات إيجابية في إدارة إصابات الأسنان المزمنة، إلا أنه لا تزال هناك فجوات في التعامل مع الحالات المعقدة. تُسلط هذه الدراسة الضوء على الحاجة إلى برامج تدريبية مُستهدفة لتعزيز كفاءة الممارسين وضمان رعاية مثالية لمرضى صدمات الأسنان.

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